ANNOTATED DIRECTORY OF ENERGY CONSERVATION PROGRAMS

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ANNOTATED DIRECTORY OF

ENERGY CONSERVATION PROGRAMS

AUGUST 1980

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ACKNOWLEDGEMENT

Over the past several years the government of Canada through the Department of Energy, Mines and Resources, and the Consumer Research Branch of the Department of Consumer and Corporate Affairs has supported an important program of studies in the area of behavioral energy research. This program centers on consumer consumption and conservation activities in the areas of residential and automobile energy applications.

The preparation of the Annotated Directory of Energy Conservation Programs was made possible by support received from this program. The work in the directory was part of a larger study dealing with energy conservation options. The researchers involved in this work very much appreciate the support received from the federal energy research program.

INTRODUCTION

This Directory comprises summaries of 34 consumer energy conservation programs in operation in Canada and the U.S. The programs are listed by area of focus (home heating and cooling, household appliances, private transportation, community involvement) in Exhibit 1.

The Directory has been designed to perform two functions. First, to draw together the essential elements of a number of energy conservation programs into a format useful for practitioners, researchers and policy-makers in this field. Second, to serve as the basic reference material in an on-going energy conservation study.

It should be noted that the Directory is neither exhaustive nor necessarily representative of the broad range of conservation programs that have been implemented. Although considerable effort was made to gather data on existing programs, it was clear as this volume was being finalized, further programs could be identified. Further, while care was taken to summarize each program accurately, the reader is advised that some of the details become dated.

Each summary contains information on the program objectives, operating details, results to date, costs and benefits, and source of funding. The organization responsible for developing and implementing the program is identified along with the key contact person who can provide any further details the reader may require. Specific and general background literature references are also provided.

In the process of compiling the Directory it became apparent that certain types of programs tend to dominate each of the four areas of focus. The provision of energy consumption and conservation information, through programs involving the mass media, booklets, demonstrations, labeling and audits, has clearly been the most favored path to energy conservation. The following list provides an indication of the main program emphases in each area.

Home Heating and Cooling Emphasis:

- Information campaigns focusing on home energy use and conservation tips
- Energy efficient demonstration homes
- Home audits to identify areas for insulation and other improvements
- Retrofitting of existing homes
- Development of energy conserving building standards, and incentives for builder to exceed these
- Alternative heating and cooling sources, particularly solar and wind
- Air-conditioning load cycling

Household Appliance Program Emphasis:

- Information campaigns focusing on appliance energy consumption and conservation tips
- Energy efficiency labeling for major appliances

Private Transportation Program Emphasis:

- Information campaigns focusing on automobile fuel consumption, driving skills, and car-care tips.
- Restrictions on automobile use, such as speed limits and gas rationing
- Automobile fuel efficiency standards
- Carpooling and vanpooling

Community Involvement Program Emphasis:

- Information campaigns focusing on the need to conserve, major conservation methods, and the importance of total community involvement
- Home audits and retrofitting
- Developing regional conservation standards

Finally, if the reader has comments and suggestions regarding the Directory, please contact one of the Directory Editors.

August 1980
J.D. Claxton, Vancouver
C.H.G. McDougall, Waterloo
J.R.B. Ritchie, Calgary

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PROGRAM NAME:
Home Planning Kit

ORGANIZATION:
BC Hydro

CONTACT:
Dr. Tim Newton
Energy Conservation Division
BC Hydro
970 Burrard Street
Vancouver, BC V6Z 1Y3
Tel: (604) 663-3583

INDEX NUMBER:

CAN-H-02
July, 1980

PROGRAM TYPE:

Voluntary
Non-financial
General Home
Regional

PROGRAM DESCRIPTION:

An energy efficiency aid for home builders & remodellers, the kit comprises 6 booklets which contain energy efficiency ideas & guidelines, and expected savings from each recommendation (cost of operation tables).

Areas covered are:

1. General conservation
2. Heating systems & insulation
3. Kitchen & laundry planning
4. Lighting & wiring
5. Water heating
6. Solar energy

COSTS-BENEFITS:

Unknown

MAJOR RELATED LITERATURE REFERENCES:

1. Quelch, John A. and Peter Thirkell, "Builders as Consumers: Their Role in Residential Sector Energy Conservation", in R.A. Fazzolone and C.B. Smith (eds.), Changing Energy Use Futures, Permagon Press, New York, 1979.

2. Lengyel, Dorothy L., Selected Energy Conservation Options for the Home, Pen State University, Cooperative Extension Service, 1978.

PROGRAM NAME:
Home Insulation Program (HIP)

ORGANIZATION:
Tennessee Valley Authority

CONTACT:
David B. Lamb
Tennessee Valley Authority
Power Service Center - 6
Chattanooga, Tennessee 37401
Tel: (615) 755-3656

INDEX NUMBER:

US-H-21
July, 1980

PROGRAM TYPE:

Voluntary
Financial
Home Audit
Regional

PROGRAM DESCRIPTION:

TVA developed and launched HIP in August 1977 to assist consumers save money by reducing residential energy consumption, to reduce TVA's fuel costs and to delay the need for additional generating capacity. Conducted in cooperation with all 160 distributors of TVA power, the program provides onsite inspections of residential dwellings and no-interest loans for weatherization measures.

Regardless of the type of fuel used in heating or cooling a home, all residential consumers (including tenants, landlords and mobile home residents) are eligible for the free home audit conducted by 350 TVA trained energy advisors. The advisor discusses weatherization improvements, their costs and benefits, the no-interest loan financing available, and provides a list of TVA approved local installation contractors.

No-interest weatherization loans are available for electrically heated/cooled homes and cover materials and labor to a maximum of $2000. Repayment is made in equal payments on the consumer's electricity bill for a period up to 7 years (determined by the loan amount and the consumer).

As of March 31, 1980, nearly 200,000 homes had been surveyed, over 80,000 dwellings had received loans (average = $1000), and nearly 300 million kWh were being saved annually by loan customers. Program goal is to weatherize over 500,000 homes by 1987.

COSTS-BENEFITS:

By 1987 HIP is expected to produce annual energy savings of 2.54 billion kWh, annual consumer benefits of $89 million, and to save 1071 megawatts of peak demand for the TVA power system at a total estimated program cost of $214 million.

MAJOR RELATED LITERATURE REFERENCES:

1. Tennessee Valley Authority Program Summary, Division of Energy Conservation and Rates, April 1980.

2. Maier, Alan K. "Measuring Residential Energy Conservation." In R. A. Fazzolare and C. B. Smith (eds.), Changing Energy Use Futures, Permagon Press, New York, 1979.

3. Coney, Kenneth A. and Bruce J. Walker, "Defining and Predicting the Diffusion of the Residential Energy Audit". Paper to be presented at the International Conference on Consumer Behavior and Energy Use, Banff, Alberta, September 1980.

PROGRAM NAME:
ENER$AVE For Home Insulation

ORGANIZATION:
Conservation & Renewable Energy Branch, EMR

CONTACT:
Ron Argue
ENER$AVE Program
Energy, Mines & Resources
580 Booth Street
Ottawa, Ontario K1A 0E4
Tel: (613) 995-1801 or Heatline: (800) 267-9563

INDEX NUMBER:

CAN-H-22
July, 1980

PROGRAM TYPE:

Voluntary
Non-financial
Home Audit
National

PROGRAM DESCRIPTION:

Introduced in September, 1977, ENER$AVE offers free home audits and telephone information services to help Canadian homeowners save energy and money through improved home insulation.

All owners of detached, semi-detached and row houses (up to a maximum of three storeys) are eligible for a free computer analysis of their home's insulation requirements.

Homeowners complete a 32-point questionnaire on their dwellings's structure and heating characteristics (e.g., age, construction, size and shape, existing insulation, type of heating fuel, winter thermostat settings, etc.) and send it to Ottawa for computer processing. In return they receive, through the mail, a set of recommended home insulation procedures, their individual material and labor costs, projected savings, and payback periods, as well as advice on how to get financial assistance.

As a complement to the computer analysis service, ENER$AVE operates a national toll-free Heatline, providing technical advice on home insulation, details on federal and provincial grants and loan programs and general household energy conservation information.

MAJOR RELATED LITERATURE REFERENCES:

1. Meier, Alan K., "Measuring Residential Energy Conservation", in R.A. Fazzolare and C.B. Smith (eds.), Changing Energy Use Futures, Permagon Press, New York, 1979.

2. Coney, Kenneth A. and Bruce J. Walker, "Defining and Predicting the Diffusion of the Residential Energy Audit. Paper to be presented at the International Conference on Consumer Behavior and Energy Use, Banff, Alberta, September 1980.

PROGRAM NAME:
Canadian Home Insulation Program (CHIP)

ORGANIZATION:
Canadian Mortgage & Housing Corp.

CONTACT:
Andre Lagne
Manager, CHIP
P.O. Box 700
St. Laurent Postal Station
Montreal, Quebec H4L 5A8
Tel: (514) 341-1230

INDEX NUMBER:

CAN-H-23
July, 1980

PROGRAM TYPE:

Voluntary
Financial
Retrofit Financing
National

PROGRAM DESCRIPTION:

The CHIP grant is available on application by the homeowner once the insulation (or weatherstripping, caulking, etc.) has been completed. The homeowner attaches contractor invoices to his grant application and receives a cheque from CMHC. The grant is taxable and must be declared as income by the applicant. The grant applies to principal residences (not vacation homes) that are homes or apartments of 3 storeys or less, and built before 1961 (1977 in Yukon and Northwest Territories). The CHIP grant covers the full cost of insulation (weather caulking, etc.) materials to a maximum of $350 per unit and 1/3 of labour costs to a maximum of $150 per unit.

COSTS-BENEFITS:

The program is funded federally through CMHC. Since its introduction in September, 1977, approximately 10% of eligible homeowners have applied for the CHIP grant. The average net cost per loan is $265, average grant $320, processing costs, $25, tax recovery $80.

MAJOR RELATED LITERATURE REFERENCES:

1. Meier, Alan K., "Measuring Residential Energy Conservation", in R.A. Fazzolare and C.B. Smith (eds.), Changing Energy Use Futures, Pergamon Press, New York, 1979.

PROGRAM NAME:
Home Insulation & Energy Conservation Act

ORGANIZATION:
New York State Department of Public Service

CONTACT:
Ms. Shirley R. Anderson
Senior Energy Efficiency Analyst
Office of Research, Public Service Commission
3rd Floor, Agency Building 3
Empire State Plaza
Albany, New York 12223
Tel: (518) 474-1931

INDEX NUMBER:

US-H-24
July, 1980

PROGRAM TYPE:

Voluntary
Financial/non-financial
Home audit
Regional

PROGRAM DESCRIPTION:

Initiated as a New York State project in June 1978, the HIEC rogram offers customers three types of home energy audits:

A. A trained utility representative visually inspects the home, the utility processes the data and mails results and recommendations to the customer who is charged $10.

B. The customer collects the data using utility instructions, the utility processes the data and mails out results and recommendations. Customer is charged $3.

C. The customer completes the audit using utility instructions, and analyzes data with an energy workbook. No fee is charged.

All homeowners or renters receiving electric or gas service on a residential classification and residing in a 1-4 family house are eligible for the audits which cover home insulation, heating and structural characteristics. Analysis identifies areas for conservation savings and provides recommendations for cost-effective improvements. A list of local approved insulation contractors, who must give a one-year guarantee on workmanship, materials and meet other professional and business standards, is also provided with these recommendations.

Utilities organize local banks to make low-interest loans available to the customers for the energy conservation improvements. Loans are made by two-party cheque, endorsed by both customer and contractor. The program is backed by multi-media advertising, direct mail brochures to utility customers, selected use of thermography, and neighborhood outreach efforts.

In the first year of the program 15,000 customers requested a Type-A audit, 3,000 a Type-B, 90,000 the Energy Workbook, and 536 loans totalling $800,000 were financed.

COSTS-BENEFITS:

Net audit costs (Type A = $82, Type B = $62), media advertising and thermography costs are borne by taxpayers. New York data for October 1978 to March 1979 indicated total program costs of $950,000 and total savings of $620,000 with similar on-going savings expected.

MAJOR RELATED LITERATURE REFERENCES:

1. Anderson, S. R., New York State Home Insulation & Energy Conservation Act Program, 1979 Interim Report, New York State Department of Public Service, September, 1979.

2. National Energy Conservation Policy Act, Public Law 95-619, 92 Statute 3206 (1978).

PROGRAM NAME:
Home Energy Check

INDEX NUMBER:

US-H-25
July, 1980

ORGANIZATION:
Seattle City Light

PROGRAM TYPE:

Voluntary
Financial
Home audit
Regional

CONTACT:
Robert M. Gregson
Manager, Consumer Advisory and Conservation Services
Seattle City Light
1015 Third Avenue
Seattle, Washington 98104
Tel: (206) 625-3000

PROGRAM DESCRIPTION:

Begun in April 1978, the HEC program is one of many methods employed by the City of Seattle to reduce its residential energy consumption 10% by 1990. The program provides residential conservation incentives through neighborhood workshops and free home energy audits.

At the workshops, attended by about 10 people each session, citizens are informed of the objectives of the City conservation program and shown practical techniques, such as reading utility bills and weatherstripping a door. Areas of energy loss in the host's home are indicated along with cost estimates and payback periods for various conservation measures. Thermographic pictures of houses in the neighborhood are also shown and interpreted. The free home energy audit is provided upon request to all customers of Seattle City Light, the city-owned utility. 15 trained auditors check approximately 15 homes each per week for insulation, hot water heaters, weatherstripping, caulking, etc., selling at cost many of the materials required for improvements. A computerized followup report is sent to the homeowner, outlining the audit results, costs and payback periods for suggested improvements. Under an insulation financing program loans are offered at a 10% discount (paid by the utility) and 6% interest with 3 years to pay. Low income customers may soon enjoy free weatherisation work under another proposed city program.

By December 1979 (after 18 months of operation) 98 home workshops and 6650 home audits had been completed. A 2-3 month audit backlog is now typical, leading to the possibility of increased staffing and/or computer sophistication (e.g., direct telephone-computer hookup for instant audit feedback from the home being inspected). The city aims to conduct 7500 audits annually for an indefinite period.

COSTS-BENEFITS:

Each audit costs the city $50. Actions taken during and subsequent to the audit are each expected to achieve a 5% reduction in household energy consumption, for an annual system-load saving of 500 kilowatts (or $130,000 p.a.). Annual operating costs of $485,000 (salaries $380,000, admin. $96,500, materials $8600) are financed through a Federal grant and City Light contributions. Gregson estimates the program's cost-benefit ratio to be 2:1 when its displacement of new generating equipment otherwise required is taken into account.

MAJOR RELATED LITERATURE REFERENCES:

1. Meier, Alan K., "Measuring Residential Energy Conservation", in R.A. Razzolare and C.B. Smith (eds.), Changing Energy Use Futures, Pergamon Press, New York, 1979.

PROGRAM NAME:
Home Conservation Requirement (HCR)

ORGANIZATION:
City of Seattle

CONTACT:
Ms. Marta Metcalf
Program Coordinator
Seattle Energy Office
920 Artic Building
Seattle, Washington 98104
Tel: (206) 625-3835

INDEX NUMBER:

US-H-26
July, 1980

PROGRAM TYPE:

Mandatory, proposed
Non-financial
Residential Retrofit
Municipal

PROGRAM DESCRIPTION:

The proposed HCR was developed by the Seattle City Energy Office at the instigation of the Mayor and City Council who believed it was time to review mandatory weatherization programs while still developing and operating voluntary programs (see Home Energy Check, US-H-25).

HCR's goal is to improve the energy efficiency of Seattle's existing housing stock by requiring all single and multiple-family dwellings to meet certain mandatory minimum weatherization standards within five years. Proposed standards, which are cost-effective in most homes, concentrate on insulation, attic ventilation, vapor barriers, water heater thermostat setback, and caulking and weatherstripping. Dwellings could be exempted from one or more portions of the requirement for specific structural and financial hardship reasons.

Under the recommended program, the conservation requirement would have an effective date of three years after the passage by the City Council. During those three years voluntary weatherization and certification of compliance would be encouraged through large-scale publicity campaigns. Those dwellings which had not been weatherized and certified during the voluntary period would be inspected during a two-year enforcement period. Non-compliance would invoke a notice of violation requiring compliance within 90 days, after which a second inspection would be made. Continued non-compliance would result in a civil penalty of $3 per day per dwelling unit and charge for further inspections.

COSTS-BENEFITS:

Total estimated costs for the 5 year program are $59.7 million (1980 dollars), comprising a $4.3 million implementation and enforcement budget, and $55.4 million in weatherization investment costs.

Annual electricity, gas and oil energy savings of over one trillion Btu's, or $5.5 million (1979) dollars), discounted over the life of the weatherization investments indicate total program benefits of $98.8 million.

MAJOR RELATED LITERATURE REFERENCES:

1. Home Conservation Requirements, Report and Program Proposal, Seattle Energy Office, December 1979.

PROGRAM NAME:
Thermography Flyover

INDEX NUMBER:
CAN-H-27
July, 1980

ORGANIZATION:
BC Hydro & BC Energy Commission

PROGRAM TYPE:
Voluntary
Non-financial
Home Audit
Regional

CONTACT:
Dr. Tim Newton
Energy Conservation Division
BC Hydro
970 Burrard St.
Vancouver, B.C. V6Z 1Y3
Tel: (604) 663-3583

PROGRAM DESCRIPTION:

BC Hydro uses thermography to detect roofs with high rates of heat loss. Public displays are arranged in local shopping malls, and technicians show owners how to locate their own homes and help interpret the information conveyed by the images.

In addition, computer terminals, programmed by BC Energy Commission to analyze home insulation from owners' information, are set up at each display to calculate and printout suggestions for improvements, with estimates of $ savings provided. An insulation demonstration 'house' (staffed by the Insulation Association) is often also used to show all forms of insulation, windows, etc. suitable for such improvements.

The thermography program, commenced in Spring 1978, will cover all major population centres of the province served by BC Hydro over a 3-year period. To date there has be a more than 60% response by affected homeowners.

COSTS-BENEFITS:

No data available.

MAJOR RELATED LITERATURE REFERENCES:

1. Cihlar, J., "Use of Aerial Thermography in Canadian Energy Conservation Programs," International Symposium on Remote Sensing of the Environment, Vol. 11, Procedings of the Environmental Research Institute of Michigan, (1977), Ann Arbor, Michigan, pp. 1157-1206.

2. "Applications of Thermography", Mechanical Engineering, March 1977, p. 61.

PROGRAM NAME:
Memphis Solar Water Heating Demonstration

ORGANIZATION:
Tennessee Valley Authority

CONTACT:
Douglas D. Wilner
Tennessee Valley Authority
1470 Chestnut Street - Tower II
Chattanooga, Tennessee 37401
Tel: (615) 755-6851

INDEX NUMBER:

US-H-41
July, 1980

PROGRAM TYPE:

Voluntary
Financial
Solar Heating
Regional

PROGRAM DESCRIPTION:

The Memphis Solar project involves the design, installation, certification, and low-interest financing of solar water heaters which replace existing electric resistance water heating systems.

Upon request TVA provides a free home survey to determine the feasibility of solar water heating. If installation is undertaken TVA provides a 20 year, 3.35% loan for system and installation costs. No downpayment is required and the loan is repaid through the monthly electricity bill at $13 per month.

The program is administered through the South Memphis Development Corporation, a non-profit community development corporation that provides solar information, purchases solar equipment and trains local contractors to install the systems under the TVA program. Six advisors conduct the solar surveys and post-installation inspections. The systems are installed by 5 small businesses.

By March 31, 1980 3200 program information requests had resulted in 590 contracts and 450 system installations.

COSTS-BENEFITS:

The final cost to the customer average $2093 per installation, for annual water heating cost savings of approximately 65%. The project provides TVA with 4.19 million kWh savings per annum per 1000 systems installed.

MAJOR RELATED LITERATURE REFERENCES:

1. Tennessee Valley Authority Program Summary, Division of Energy Conservation and Rates, April 1980.

2. US Department of Housing and Urban development, "Selling the Solar Home: Some Preliminary Findings", Residential Solar Program Report #1, 1978.

3. Solar Heating and cooling Demonstration Program - Cycle 1, Government Printing Office, Washington, DC 20402.

PROGRAM NAME:

Solar Domestic Hot Water Demonstration

INDEX NUMBER:

CAN-H-42
July, 1980

ORGANIZATION:

Ministry of Energy, Mines and Resources, British Columbia

PROGRAM TYPE:

Voluntary
Financial
Home Heating
Regional

CONTACT:

Dr. James M. Hill
Renewable Energy Coordinator
Conservation & Technology Division
Energy, Mines and Resources
2006 - 1177 West Hastings St.
Vancouver, B.C. V6E 2L7
Tel: (604) 689-1831

PROGRAM DESCRIPTION:

This program is one of several demonstration programs designed to determine what role solar energy can fulfill in the future energy supply requirements of British Columbia.

Program objectives are 1. to see how well solar energy systems perform under a wide variety of installation conditions, 2. to determine the willingness of the public to turn to solar energy and to reveal the problems they face if they do, 3. to determine what energy contributions can be expected from solar domestic hot water systems.

100 families located in four cities will receive solar domestic hot water heating systems at a cost of $1500 (normal retail $2500-3500) with the balance paid by the Government.

COSTS-BENEFITS:

The project is sponsored jointly by the Federal and B.C. Provincial governments, with a budget of $313,000. This breaks down to administration and installation of the system $365,000, monitoring $78,000, promotion $10,000, with $150,000 recovered for homeowners.

Benefits not yet quantified.

MAJOR RELATED LITERATURE REFERENCES:

1. U.S. Department of Housing and Urban Development, "Selling the Solar HOME: SOME PRELIMINARY FINDINGS", RESIDENTIAL SOLAR PROGRAM REPORT #1, 1978.

2. SOLAR HEATING AND COOLING DEMONSTRATION PROGRAM - CYCLE 1, GOVERNMENT PRINTING OFFICE, WASHINGTON, DC 20402.

PROGRAM NAME:
Passive Solar Home Project

ORGANIZATION:
Tennessee Valley Authority

CONTACT:
James T. Gallagher
Tennessee Valley Authority
1470 Chestnut Street - Tower II
Chattanooga, Tennessee 37401
Tel: (615) 755-6851

INDEX NUMBER:

US-H-43
July, 1980

PROGRAM TYPE:

Voluntary
Financial
Solar Heating
Regional

PROGRAM DESCRIPTION:

This program involves designing, constructing and monitoring the energy performance of passive solar homes (i.e., homes constructed to take maximum advantage of the sun without using mechanical equipment for collecting or storing solar energy).

Eleven different house designs, ranging from 1000-2000 square feet and $35,000-$75,000, are being tested on 44 sites in Tennessee Valley. Customers who buy the homes receive a $2500 incentive payment and in return allow TVA to install monitoring equipment and to use the houses for limited demonstration purposes.

Six non-profit community development organizations are sponsoring and coordinating construction with 9 builders. Construction is supervised by the Solar Applications and Architectural Design Branches of TVA.

At March 31, 1980, eight houses were completed.

COSTS-BENEFITS:

Total program costs of $2.7 million will be financed by TVA. Loan repayments will recover $1.98 million for a net cost of $720,000.

MAJOR RELATED LITERATURE REFERENCES:

1. Tennessee Valley Authority Program Summary, Division of Energy Conservation and Rates, April 1980.

2. Yellot, John I., "Passive Solar Heating and Cooling Systems," ASHRAE Journal, vol. 20 #1, Jan. 1978, pp. 60-67.

3. Mazria, Edward, The Passive Solar Energy Book, Rodale Press, Emmans, PA, 1979.

PROGRAM DESCRIPTION:
Heat Pump Financing Program (HPFP)

ORGANIZATION:
Tennessee Valley Authority

CONTACT:
R. Lee Culpepper
Tennessee Valley Authority.
Power Service Center - 4
Chattanooga, Tennessee 37401
Tel: (615) 755-3901

INDEX NUMBER:

US-H-61
July, 1980

PROGRAM TYPE:

Voluntary
Financial
Retrofit Financing
Regional

PROGRAM DESCRIPTION:

TVA developed HPFP as an adjunct to its Home Insulation Program (US-H-21) to help residential consumers save on energy costs and to encourage the adoption of more energy efficient heating systems. The financing provision, operated through 107 of TVA's 160 power distributors, provides qualifying consumers with low-interest loans for the purchase and installation of heat pump units.

To participate in this program, owners of single family detached dwellings or duplexes first obtain a free home energy survey offered by TVA and the distributor. If a heat pump loan is to be made, the consumer is required to carry out the cost-effective weatherization measures recommended in the survey. One of 53 trained heat pump advisors will help the consumer calculate the desirability of a heat pump system and provide a list of TVA-approved heat pump dealers who have agreed to install the system according to TVA specifications.

Customers may borrow at low interest rates (TVA's average borrowing cost) for buying and installing the electric heat pump, with repayments made in equal payments on their electricity bills for a period up to 10 years. Loans average $2000 - $4000 per installation depending on the size of the unit, the cost of duct work needed, and labor costs. The advisor inspects the installation work and authorizes contractor payment.

As of March 31, 1980, 1700 loans had been made following 4900 heat pump inspections. 6.66 kWh will be saved annually by consumers who have received loans.

COSTS-BENEFITS:

TVA estimates that a consumer can save 4000-7000 kWh during a single heating season with an electric heat pump. This represents $130-$230 p.a. on electric heat bills. TVA expects to make 40,000 loans over the next 8 years at a total cost of $5-9 million and producing savings of $12 million for TVA through reduced energy supply cost.

MAJOR RELATED LITERATURE REFERENCES:

1. Tennessee Valley Authority Program Summary, Division of Energy Conservation & Rates, April 1980.

2. Derven, Ronals, "Heat Pumps: Cheapest Cooling and Heating For Your Home?", Popular Science Monthly, Vol. 109, Sept. 1976, pp. 92-95.

PROGRAM NAME:
Insulation Financing Program

ORGANIZATION:
BC Hydro

CONTACT:
Dr. Tim Newton
Energy Conservation Division
BC Hydro
970 Burrard Street
Vancouver, BC V6Z 1Y3
Tel: (604) 663-3583

INDEX NUMBER:

CAN-H-62
July, 1980

PROGRAM TYPE:

Voluntary
Financial Incentives
Residential Insulaton
Regional

PROGRAM DESCRIPTION:

BC Hydro encourages the installation of good insulation by offering to finance up to $500 of the cost, on approved credit, at the rate of 10% p.a. on the declining balance (with CCA).

BC Hydro may also finance, for a period of up to 2 years, the installation of insulation in walls, ceilings and floors, and thermal or storm windows, in existing homes. (since April 1, 1977)

COSTS-BENEFITS:

In the first 13 months of the plan, BC Hydro financed $519,000 for 1344 homeowners.

MAJOR RELATED LITERATURE REFERENCES:

1. "Retrofitting Existing Homes for Energy Conservation: An Economic Analysis", For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402.

2. Darley, John M., "Energy Conservation Techniques as Innovations, and their Diffusion." Energy Builder, Vol. 1, #3, April 1978, pp. 339-343.

PROGRAM NAME:
Home Insulation Loan Program

ORGANIZATION:
City of Wichita

CONTACT:
James E. Myers
The City of Wichita
City Hall
455 North Main St.
Wichita, Kansas 67202
Tel: (316) 268-4105

INDEX NUMBER:

US-H-63
July, 1980

PROGRAM TYPE:

Voluntary
Financial
Space Heating
Regional

PROGRAM DESCRIPTION:

A testing program of 10 typical Wichita houses during the winter heating season of 1974/75 showed attic insulation upgrading to be the most effective way of reducing heating costs. Accordingly in January 1976 a zero-interest attic insulation loan program was established with an initial Community Development Grant of $135,000. A public awareness campaign using pamphlets, on insulation benefits and loan details, and aerial thermography was mounted to encourage residents to insulate.

All city homeowners are eligible for the loan, which requires a 10% downpayment and, depending on family income and size, takes between 6 and 60 months to repay.

Participating contractors, who must agree to meet Federal insulation material and instalation standards, complete contract bid sheets and loan applications on behalf of homeowners, using city-provided costing tables. Inspections of contractor work are made either randomly or at the customer's request, to ensure compliance with the standards. Any complaints can be turned over to Federal agencies.

By September 1978, 21 months after commencement of the program, 3500 loans had been made with a further 1800 home insulations not using the loan taking place as a result of the public awareness campaign. Two-thirds of the city's insulation contractors participate in the program, and the loan repayment default rate is approximately 2%.

Recent plans to expand the program to rental units, homes of the elderly and residential units outside the city have been shelved until funding permits.

COSTS-BENEFITS:

Total funding to September 1978 was $485,000.
Quantified benefits not available.

MAJOR RELATED LITERATURE REFERENCES:

1. Darley, John M., "Energy Conservation Techniques as Innovations, and their Diffusion." Energy Builder, Vol. 1, #3, April 1978, pp. 339-343.

PROGRAM NAME:
California 55% Solar Tax Credit

ORGANIZATION:
California Energy Commission

CONTACT:
Ms. Dianna Rains
Solar Office
California Energy Commission
1111 Howe Ave.
Sacramento, California 95825
Tel: (916) 920-7727

INDEX NUMBER:

US-H-64
July, 1980

PROGRAM TYPE:

Voluntary
Financial Incentive
Solar Heating
Regional

PROGRAM DESCRIPTION:

California has a comprehensive set of programs designed to achieve 1.5 million solar installations by 1985, representing 20% of commercial and residential buildings.

The California 55% Solar Tax Credit was enacted October 1977 and made retroactive to January 1977. It will expire 31 December 1980 unless extended by law. The credit of 55%, to a maximum of $3000, applies to water heating (domestic water heating, swimming pool heating, or pool covers), space conditioning, solar electricity generation systems, wind energy systems, and solar industrial applications.

Unlike the Federal Solar Tax Credit (30% on the first $2000, 20% thereafter, to a maximum of $10,000) which is deductible from the California Credit, and which is due to expire 1984, the California credit is allowed to the person owning the property at the time the system is installed. The tax credit in excess of state taxes due may be carried over into subsequent tax years.

Credit may also be claimed on conservation measures taken to enhance the effectiveness of the solar system, including weather stripping, insulation, and water from restrictors.

COSTS-BENEFITS:

In 1977 13,000 taxpayers claimed credits totalling $10.5 million, plus an additional $2.7 million to be paid as carryover. 99.7% of the credits were claimed by individuals (average claim = $1472, median income = $30,581, compared with average family income = $16,000. 72% of claims were for swimming pools, 15% for domestic water heating systems. 7% included conservation measures. No estimate of benefits is available.

MAJOR RELATED LITERATURE REFERENCES:

1. Nemetz, Peter N., Hankey, Marilyn and Zathof, Bert, "Residential Energy Conservation, A California Case study", Report to Consumer and Corporate Affairs, Canada, 1980.

2. Cunningham, William H., and Joseph Brandel, "Energy Conservation, Price Increases and Payback Periods." In H. Keith Hunt (ed.) Advances in Consumer Research, vol. V, Proceedings of the Eighth Annual Conference of the Association for Consumer Research, Ann Arbor, Michigan, 1978.

PROGRAM NAME:
Wisconsin Alternate Energy Tax Credit

ORGANIZATION:
Dept. of Industry, Labor and Human Relations

CONTACT:
John Neville
Program Manager
Dept. of Industry, Labor & Human Relations
Safety & Building Division -- GEFI
Madison, Wisconsin 53702
Tel: (608) 266-1149

INDEX NUMBER:

US-H-65
July, 1980

PROGRAM TYPE:

Voluntary
Financial
Solar Heating
Regional

PROGRAM DESCRIPTION:

Enacted May 3, 1978, the Wisconsin Tax Credit applies to individuals or corporations that install (or modify) qualifying solar, wind or waste conversion energy systems.

The credit varies according to the year of installation (e.g. 1977/78 30%, 1983/4 12%) and covers design, construction, installation and equipment system expenses in the range of $500-$10,000 for individuals.

The taxpayer is required to prove that the system is cost-effective over a 25-year period to qualify for the credit. A formula to help calculate cost-effectiveness is provided in a separate schedule the taxpayer attaches to his state income tax.

In the program's first year of operation 178 applications were approved. Average system cost was $5000 and the average income tax benefit was $1225. 97% of applications were for solar systems, 2% for wind energy systems and 1% for waste energy conversion systems.

COSTS-BENEFITS:

Preliminary analysis indicates the credit could save 38,000 MBTU (5150 gallons of oil) per annum or nearly $3 million over the 25-year life of the installed systems. In 1978/79 the state distributed $244,046 in tax benefits for a return of $103,000 (in one year) in fuel savings.

MAJOR RELATED LITERATURE REFERENCES:

1. Nemetz, Peter N., Hankey, Marilyn and Zethof, Bert, "Energy Conservation Incentives: A Wisconsin Case Study", Report to Consumer and Corporate Affairs, Canada, 1980.

PROGRAM NAME:
Air-Conditioning Cycling Program

ORGANIZATION:
Tennessee Valley Authority

CONTACT:
Harold G. Womble
Tennessee Valley Authority
210 Power Building
Chattanooga, Tennessee 37401
Tel: (615) 755-6773

INDEX NUMBER:

US-H-81
July, 1980

PROGRAM TYPE:

Voluntary
Financial Incentive
Load Management
Regional

PROGRAM DESCRIPTION:

TVA will install remote control switches on existing central air-conditioners or heat pumps of 50,000 volunteer consumers. The participants will receive a $5 per month credit on their electric bills and, in return, will allow TVA to cycle the normal operation of their air-conditioning systems. The program will allow TVA to make more efficient use of generating equipment and reduce the need to operate expensive oil-fired generators.

When the demand for TVA power systems reaches a predetermined level the compressors, but not the fans, of central air conditioners of participating customers will be turned off by remote control for a period of 7 1/2 minutes per half hour. Because the off-cycle is short, customers should experience little inconvenience.

Participation is for one air-conditioning season, automatically renewable for one-year periods unless either party decides to cancel. TVA expects to have the 50,000 volunteer participants by 1983 and to eventually expand the program to include 350,000 volunteers.

COSTS-BENEFITS:

TVA will bear all costs of the program, including buying, installing, maintaining and inspecting the remote-control equipment. Participants will receive a monthly credit on their electric bills during the months of June to September. TVA estimates the program cost at $7.7 million, with each installation expected to reduce TVA's summer peak demand by 1.4 kilowatts, resulting in a total reduction of 68 megawatts at system peak.

MAJOR RELATED LITERATURE REFERENCES:

1. Grome, Mary Lynn, "California Residential Load Cycling Attitude Survey", in R.A. Fazzolare & C.B. Smith (eds.), Changing Energy Use Futures, Pergamon Press, New York, (1979), Vol 2., pp. 874-883.

2. Herman, Pat & Dewey Seeto, "Some Empirical Evidence on Customer Attitudes and Behavior Towards Volunteer Direct Electrical Load Control Programs: A Policy Perspective on Residential and Commercial Customers", Paper to be presented at the International Conference on Consumer Behaviour and Energy Use, Banff, Alberta, September 1980.

3. Corney, William J., Yantis, Betty & John E. Nixon, "Consumer Acceptance of Centralized Control of Electrical Energy Usage", Paper to be presented at the International Conference on Consumer Behaviour and Energy Use, Banff, Alberta, September 1980.

PROGRAM NAME:
Manpower Training

ORGANIZATION:
Tennessee Valley Authority

CONTACT:
Mr. Eddie L. Tramel
Conservation & Energy Management Branch
Tennessee Valley Authority
Power Service Centre - 5
Chattanooga, Tennessee 37401
Tel: (615) 755-3651

INDEX NUMBER:

US-H-91
July, 1980

PROGRAM TYPE:

Voluntary
Non-financial
Home Weatherization
Regional

PROGRAM DESCRIPTION:

TVA in cooperation with the Tennessee Community Services Administration (CSA) and the Tennessee Community Action Agencies is conducting an 18-month pilot demonstration program to persons employed under the Comprehensive Employment Training Act (CETA) in home weatherization. The more than 500 CETA trainees will weatherize about 8000 low-income family dwellings during the training program.

TVA is supporting & coordinating all training activities. These include providing an intensive orientation course for field training supervisors, conducting periodic classroom seminars for CETA workers, and reviewing and evaluating trainee progress.

In each of the electrically heated homes weatherized by CETA trainees it is estimated that more than 6000 kWh will be saved. Further, the weatherization of each dwelling will reduce the winter system demand by about 2 kw.

COSTS-BENEFITS:

The estimated cost of the project is $895,000 of which $535,000 will be financed by power funds.

MAJOR RELATED LITERATURE REFERENCES:

1. Tennessee Valley Authority Program Summary, Division of Energy Conservation, Rates, April 1980.

PROGRAM NAME:
Residential Energy Conservation Schedule

ORGANIZATION:
Cleveland Electric Illuminating Co.

CONTACT:
Robert H. Love
Residential Energy Application Dept.
Cleveland Electric Illuminating Co.
P.O. Box 5000
Cleveland, Ohio 44101
Tel: (216) 622-9800

INDEX NUMBER:

US-H-101
July, 1980

PROGRAM TYPE:

Voluntary
Financial
Home Heating
Regional

PROGRAM DESCRIPTION:

The Energy Conservation Rate is an ongoing schedule approved by the Public Utilities Commission of Ohio in November 1976. The objective of the rate is to provide an inducement to the construction industry and home-buying public to provide improved thermal efficiency in residential dwelling units.

The rate is applicable to both new and existing houses, regardless of the type of energy used for space heating. The rate recognizes that consumers incur greater costs in providing the improved insulation/construction standards required and, therefore, provides lower cost electric service.

To qualify the homeowner must provide CEI with builder-certified details of thermal installation and other energy conservation measures, and request the lower billing rate.

The rate has been effective in upgrading general insulation standards in the new construction industry in Ohio, with many municipalities using the rate standards as a guide in developing their building codes.

COSTS-BENEFITS:

Unknown.

MAJOR RELATED LITERATURE REFERENCES:

PROGRAM NAME:
EnergyMark

ORGANIZATION:
Home Builders Association of Greater St. Louis

CONTACT:
John J. Kirsch
Home Builders Association
10104 Old Olive Street Road
St. Louis, Missouri 63141
Tel: (314) 994-7700

INDEX NUMBER:

US-H-111
July, 1980

PROGRAM TYPE:

Voluntary
Non-financial
Building Standards
Regional

PROGRAM DESCRIPTION:

Begun January 1980, the EnergyMark program is an attempt by a home builders association to get builders to utilize voluntarily, comprehensive energy conserving materials and construction methods in the St. Louis area.

EnergyMark sets minimum energy conservation standards in 23 distinct areas of new home construction, keying in on 5 main areas: insulation, windows and doors, weather sealants, heating and cooling equipment, water flow and heating. To register (annually) in the program a builder must comply with these standards and in return is allowed to display a distinctive EnergyMark decal on windows of finished houses.

Builders using additional energy saving devices may qualify to display an additional 1, 2, or 3 "E"'s on the decal, thereby indicating to the buying public the higher level of energy efficiency of that home. Brochures explaining the need for residential energy conservation, the aims and details of the EnergyMark program are widely distributed throughout St. Louis to foster public awareness and demand.

By June 1980 over 70 building companies, representing 75% of new home construction in the St. Louis area, had registered in the program. 44% of these builders qualified for the 1-E, 2-E or 3-E designation. St. Louis City has subsequently adopted the EnergyMark standards as the basis for its new residential building energy code.

COSTS-BENEFITS:

Unknown.

MAJOR RELATED LITERATURE REFERENCES:

1. Quelch, John A., and Peter Thirkell, "Builders as Consumers: Their Role in Residential Sector Energy Conservation." In R. A. Fazzalore and C. B. Smith (eds.), Changing Energy Use Futures, Permagon Press, New York, 1979.

2. Lees, Al, "Home Insulation: Do Those Wild New Standards Make Sense", Popular Science Monthly, vol. 169, Sept. 1976, pp. 130-135.

3. An Assessment of Thermal Insulation Materials and Systems for Building Applications, Government Publication, El. 28: BNL-50862, SIN 061-000-00094-1, 1978.

PROGRAM NAME:
ENERGUIDE

ORGANIZATION:
Consumer & Corporate Affairs Canada

CONTACT:
Roy Bushfield
Chief of Energy Programs
Consumer & Corporate Affairs Canada
68 Victoria St., Ottawa/Hull K1A 0C9
Tel: (613) 997-4774

INDEX NUMBER:

CAN-A-01
July, 1980

PROGRAM TYPE:

Mandatory
Non-financial
Appliance Information
National

PROGRAM DESCRIPTION:

Legislated through the Consumer Packaging & Labelling Act, the ENERGUIDE program requires an energy consumption label to be prominently displayed on all major appliances manufactured after the following dates: refrigerators (Sept. 30, 1978), freezers (Nov. 30, 1979), dishwashers (June 30, 1980), clothes washers/dryers (Sept. 30, 1980), ranges (Dec. 31, 1980).

The Energuide label, attached at point of manufacture, states the kilowatt hours per month energy consumption of each model as verified by the Canadian Standards Association (CSA). CSA also periodically publishes an appliance efficiency directory, comparing energy consumption of all available brands, which is made available to the public through retail displays, utilities, the Consumers' Association of Canada & CCA offices.

COSTS-BENEFITS:

In the first 16 months of refrigerator labelling, almost one-third of all models were made over 20% more efficient, primarily through improved insulation.

Bushfield estimates that the program will produce net savings for each refrigerator purchaser of $240 (over a 10 year period), while net national savings from freezer labelling have been estimated at $37 million (over the 15-year life of the freezer @ $.04 per kWh).

MAJOR RELATED LITERATURE REFERENCES:

1. Claxton, John D., & C. Dennis Anderson, "Energy Information at Point-of-Sale: A Field Experiment", in Jerry C. Olson (ed.) Advances in Consumer Research, vol. VII, Proceedings of the 10th Annual Conference of the Association for Consumer Research, (1979), Ann Arbor, Michigan.

2. Hutton, R. Bruce & Dennis McNeill, "Research Issues, Empirical Findings and Public Policy Implications for Energy Labelling", in Jerry C. Olson, (ed.) Advances in Consumer Research, vol. VII, Proceedings of the 10th Annual Conference of the Association for Consumer Research, (1979), Ann Arbour, Michigan.

3. McNeill, Dennis L. & William L. Wilkie, "Public Policy and Consumer Information: Impact of the New Energy Labels", JCR, Vol. 6, June 1979, pp. 1-11.

PROGRAM NAME:
Project Pool It.

ORGANIZATION:
Valley Forward Association

CONTACT:
Dick Toolan
Project Manager, Project Pool It
70 East Mitchell Drive
Phoenix, Arizona 85012
Tel: (602) 248-7283

INDEX NUMBER:

US-T-01
July, 1980

PROGRAM TYPE:

Voluntary
Non-financial
Transportation
Regional

PROGRAM DESCRIPTION:

Project Pool It, a consolidated rideshare effort, was organized in June 1974 as a result of OPEC oil shortages of 1973-74. The project's main objective is energy conservation, with air pollution and traffic congestion reduction being secondary objectives.

The project covers over 2000 square miles in Maricopa County and uses computer programs to process carpool/vanpool applications on a weekly basis. Potential carpoolsers are provided with a list of other interested/active parties, and information on transit schedules. The project also helps interested companies to conduct vanpool feasibility studies and encourages employers to consider work scheduling that would be conducive to group transportation. Incentive/disincentive programs and parking management strategies are also pursued.

Marketing activities are extensive and have included TV and radio advertising, posters, shopping centre displays, free theatre tickets, prize draws, and a 'quarter car' campaign.

COSTS-BENEFITS:

Funding is supplied through a grant from the Federal Highway Administration, under the 1974 Highway Conservation Act, and local media contributions of services in lieu of local jurisdictional funds.

A 1979 Phoenix Urban Area Vehicle Occupancy study indicated positive project results but provided no quantitative cost/benefit data.

MAJOR RELATED LITERATURE REFERENCES:

National Technical Information Service (NTIS), 5285 Port Royal Rd. Springfield, Virginia 22151, provides details on major US car/vanpools. See, for example:

1. Adams, Gerald H. Car Pools (A Bibliography with Abstracts), 1976

2. Ford, Richard H. "Vanpools for Urban Transportation: Their Legislative Base, Promotion and Potential", 1977.

3. Transportation Systems Center, Comparison of Organizational and Operational Aspects of Four Vanpool Demonstration Projects, 1979.

PROGRAM NAME:
Commuter Computer

ORGANIZATION:
City of San Diego

CONTACT:
M. M. Demetre
Program Director, Commuter Computer
P. O. Box 82358
San Diego, California 92138
Tel: (714) 237-POOL

INDEX NUMBER:

US-T-02
July, 1980

PROGRAM TYPE:

Voluntary
Non-financial
Transportation
Regional

PROGRAM DESCRIPTION:

A cooperative effort of the city of San Diego, the County of San Diego, the Comprehensive Planning Organization and CALTRANS, Commuter Computer has been active since July 1, 1975. The regional ridesharing program provides two main services:

1. Dial-in service: provides a convenient & prompt means for individuals to locate carpooling partners. When the potential carpooler phones 237-POOL a receptionist completes a questionnaire over the phone. A computerized match list is mailed to the person within two working days. Individuals who need immediate assistance are contacted by phone the same day.

2. Organizational Services: Commuter computer field reps contact and work within top management to develop ridesharing programs at the employment site. Over 500 major county employers utilize these services and account for 88% of all ridesharing applications received.

In 1979 over 50,000 San Diego commuters received matching assistance through Commuter Computer. Special ridesharing programs are run for schools, sports fans, churches and skiers.

COSTS-BENEFITS:

Since 1975 CC services have conserved over 4 1/2 million gallons of fuel, saved more than $8.5 million, eliminated 8,900 trips per day, reduced air pollution by over 3,000 tons. Every tax dollar spent on CC saves users $12.

MAJOR RELATED LITERATURE REFERENCES:

National Technical Information Service (NTIS), 5285 Port Royal Rd., Springfield, Virginia 22151, provides details on major US car/vanpools. See, for example:

1. Transportation Systems Center, Comparison of Organizational & Operational Aspects of Four Vanpool Demonstration Projects, 1979.

2. Semi-annual evaluation reports available from above address.

PROGRAM NAME:
Reduced Speed Limits

ORGANIZATION:
Government

CONTACT:
Robert J. Genereux
President, CAA
150 Gloucester St.
Ottawa, Ontario K2P 0A6
Tel: (613) 237-2105

INDEX NUMBER:

INT-T-21
July, 1980

PROGRAM TYPE:

Mandatory
Non-financial
Private Automobile
National

PROGRAM DESCRIPTION:

Many nations introduced lower automobile speed limits as a result of the 1973-4 oil shortages. Some have maintained those limits (New Zealand, Netherlands), while others continue to reduce them (Poland, Japan).

A selected sample of August 1979 speed limits, in km/h, is presented below:

	Highways	Open Roads	Built-up Areas
France	130	110	60
Yugoslavia	120	100	60
Netherlands	100	80	50
South Africa	90	90	60
Turkey	90	90	50
U.S.A.	90	90	40
Brazil	80	80	80
Canada/NZ	80	80	50
Philippines	80	70	30
Japan	80	60	40

MAJOR RELATED LITERATURE REFERENCES:

1. AIT Information Special, February, 1980. pp. 4-6.

PROGRAM NAME:
Operation Tune-Up

ORGANIZATION:
Energy, Mines & Resources

CONTACT:
Walter Raepple
Coordinator, Consumer Conservation
Department of Energy, Mines & Petroleum Resources
2006 - 1177 West Hastings
Vancouver, B.C. V6E 2L7
Tel: (604) 689-1831

INDEX NUMBER:

CAN-T-31
July, 1980

PROGRAM TYPE:

Voluntary
Non-financial
Private Automobile
Regional

PROGRAM DESCRIPTION:

In February 1980 the BCAA teamed up with the federal and provincial energy ministries for an experimental illustration of the potential energy and dollar savings which can be realized through proper car driving and maintenance habits.

The project was designed to compare fuel economies of various cars before and after tune-ups and driver education seminars. Vancouver celebrities participated in the program for a 3-week period and achieved fuel economy improvements ranging from 7% to 34%, with an average increase of over 15%.

Similar projects in Ottawa, Quebec and Toronto, also sponsored by EMR and coordinated by the local AA, returned similar results.

COSTS-BENEFITS:

The projects, sponsored by EMR, each cost less than $5000. Extrapolation of the average Vancouver results indicated potential annual gas savings of 92 million gallons in B.C., and 847 million gallons in Canada.

MAJOR RELATED LITERATURE REFERENCES:

1. The Car Mileage Book: How to Buy, Drive and Maintain Your Car to Save Money and Energy, Office of Energy Conservation, Energy Mines & Resources, June 1977.

2. Russo, J.E. "A Proposal to Increase Energy Conservation Through Provision of Consumption and Cost Information to Consumers", American Marketing Association Proceedings, 1977, pp. 437-442.

PROGRAM NAME:
Car-less Days

ORGANIZATION:
Government

CONTACT:
Robert J. Genereux
President, CAA
150 Gloucester St.
Ottawa, Ontario K2P 0A6
Tel: (613) 237-2105

INDEX NUMBER:

INT-T-41
July, 1980

PROGRAM TYPE:

Mandatory
Non-financial
Private Automobile
National

PROGRAM DESCRIPTION:

Cyprus, Yugoslavia, Romania, Greece & New Zealand have all introduced mandatory car-less day systems. All use an odd/even license plate number system, except New Zealand which uses windshield stickers to indicate the car-less day.

e.g.

* Cyprus, Greece & Romania practice alternate weekend restrictions (5pm Saturday - 5am Monday in Cyprus)

* Yugoslavia - odd numbered vehicles cannot be driven on Tuesdays & first weekend of the month; even numbered vehicles on Thursdays & the third weekend.

* New Zealand - motorists cannot use their vehicles from 2am through 12 midnight on their chosen car-less day.

The US Federal Standby Emergency Energy Conservation Plan allows for a sticker-based car-less day(s) system in the event of an acute energy shortage.

MAJOR RELATED LITERATURE REFERENCES:

1. AIT Information Special, February, 1980

PROGRAM NAME:
Restrictions on Gasoline Retail Sale Hours

ORGANIZATION:
Government

CONTACT:
Robert J. Genereux
President, CAA
150 Gloucester St.
Ottawa, Ontario K2P 0A6
Tel: (613) 237-2105

INDEX NUMBER:

INT-T-51
July, 1980

PROGRAM TYPE:

Mandatory
Non-Financial
Private Transportation
National

PROGRAM DESCRIPTION:

A number of countries (e.g., Cyprus, Turkey, New Zealand, Japan, Brazil, & South Africa) currently practise a relatively uniform system of gasoline retail sales restrictions. Typically, supplies are restricted to daylight hours during the work week, with exceptions made for special professions (medical, police), essential government services, diplomats & tourists. E.g.,

1. In New Zealand gasoline is sold from 6 am to 7 pm Monday through Friday only - stations are closed from 7 pm Friday to 6 pm Monday.

2. In Japan gasoline retail hours are generally from 8 am to 8 pm. However, the government recommends that gasoline not be sold on Sundays & holidays.

During the gas crisis of summer 1975, 14 US states instigated a daily rationing system based on the odd/even license plate numbers. As of September 1979 all states had withdrawn the compulsory rationing, although the system was still maintained in some areas of California.

A March 1980 AAA Monthly Fuel Gauge Report reported that 54% of US stations were open all day Saturday, 48% open Sunday, 40% open after 8 pm on weekdays, 6% open on a 24 hour basis.

COSTS-BENEFITS:

Unknown

MAJOR RELATED LITERATURE REFERENCES:

1. AIT Information Special, February 1980.

2. AAA Monthly Fuel Gauge Surveys.

PROGRAM NAME:
Canada's Emergency Gasoline Rationing Plan.

ORGANIZATION:
Federal Government

CONTACT:
Robert J. Genereux
President, CAA
150 Gloucester St.
Ottawa, Ontario K2P 0A6
Tel: (613) 237-2105

INDEX NUMBER:

CAN-T-61
July, 1980

PROGRAM TYPE:

Emergency legislation
Financial & non-financial
Transportation
National

PROGRAM DESCRIPTION:

Under the Energy Supplies Allocation Act gas rationing would be invoked only after the crude oil and the petroleum products allocation plans had failed to prevent serious supply shortages (in the order of 20%).

Gasoline would be distributed to industry & services on a descending priority basis: 1. critical (involving health, welfare and security) 2. essential (concerning national economic stability) 3. non-essential (involving the maintenance of living standards).

Top motor fuel priority would go to public transportation (school buses, trains, urban transit, etc.) with private transportation (cars, taxis, etc.) lowest priorities.

Rationing would involve government-issued coupons, valid for a limited period, and price controls to ensure fair market prices.

As at August 1979, only Japan (5%), Zimbabwe, Rhodesia, and Poland (company vehicle fleets) imposed motor vehicle rationing. Many other countries are making plans similar to Canada's in the event of severe fuel shortages (e.g., New Zealand, Netherlands, Switzerland, US).

MAJOR RELATED LITERATURE REFERENCES:

1. AIT Information Special, Feb. 1980, pp. 7-8.

PROGRAM NAME:
US Federal Standby Emergency Energy Conservation Plan

INDEX NUMBER:
US-C-01
July, 1980

ORGANIZATION:
Department of Energy

PROGRAM TYPE:
Mandatory
Non-financial/Financial
Comprehensive
National

CONTACT:
Henry Bartholemew
Acting Director
Office of Emergency Programs
Conservation & Solar Energy, D.O.E.
1000 Independence Ave., S.W., Rm GE004A
Washington, D.C. 20580
Tel: (202) 252-4966

PROGRAM DESCRIPTION:

Announced Feb. 7, 1980 under the Emergency Energy Conservation Act (1979) which places first responsibility for dealing with an energy shortage on the individual states, but also requires the federal plan to be used as a model and backup measure for state plans.

The Federal Standby Plan consists of 8 rules; 5 interim final rules that can be implemented immediately and 3 proposed rules that must go through the rule-making procedures. Interim final rules include:

1. Multimedia public motor fuel conservation campaign
2. Minimum auto fuel purchases ($7 for 8 cylinder cars, $5 for smaller)
3. Purchases restricted to alternate days (based on license plate)
4. Reduced speed limit (by 5 mph) and stricter enforcement
5. Thermostat restrictions (heating 65; cooking 75-80; hot water 105)

Proposed measures include:
1. Employers' commitment to mass transit & variable work hours
2. Compressed workweek (to 4 days, with exceptions for key industries)
3. Car-less days (for 1-3 days/week, enforced through sticker inspection and fines).

The Plan can be implemented in a state if the state is failing to meet its mandated energy conservation target and is likely to face shortages of at least 8% of the projected normal state demand.

MAJOR RELATED LITERATURE REFERENCES:

1. Federal Register, Vol. 45, No. 27, pp. 8462-8504, (Feb. 7, 1980).

2. AAA Issues, April 1980, pp. 4-6.

PROGRAM NAME:
Eneraction

ORGANIZATION:
Office of Energy Conservation, EMR

CONTACT:
Mr. Doug Miller
Head, Community Liaison Team
Office of Energy Conservation
Energy, Mines & Resources
580 Booth Street
Ottawa, Ontario K1A 0E4
Tel: (613) 995-1801

INDEX NUMBER:

CAN-C-11
July, 1980

PROGRAM TYPE:

Voluntary
Non-financial
Community Education
National

PROGRAM DESCRIPTION:

Beginning January 1978 Eneraction was a nine month job creation program sponsored by the Office of Energy Conservation, EMR. 2000 teachers, engineers, artists, carpenters, business people, community animators were hired to promote energy conservation at the community level. Working in groups of 10 or less, their role was to build a greater awareness of the need to conserve and to create new opportunities for reducing energy consumption. A network of 152 of these Community Conservation Centres spanned four provinces (BC, Ontario, Quebec & New Brunswick).

To minimize any disruption of ongoing activities in the community and to ensure a basis for continuity, the centres were asked to work with existing groups and organizations wherever possible. The mandate allowed centres to undertake those projects most applicable to community need. These typically took the form of school education programs, community conservation displays, films and addresses to interested organizations, workshops, home energy audits and distribution of energy conservation literature.

COSTS-BENEFITS:

Funded by Energy, Mines & Resources.

MAJOR RELATED LITERATURE REFERENCES:

1. "People in Eneraction -- A Report on the Role of Citizens' Organizations in the Implementation of Energy Conservation", EMR, April, 1978.

2. "The Eneraction Chronicles", EMR, September, 1978.

PROGRAM NAME:
Total Community Conservation Project

ORGANIZATION:
3 Federal departments, 3 local communities

CONTACT:
Garth Maguire
Coordinator, NRG Action
3700 - 33rd Street
Vernon, B.C. V1T 5T6
Tel: (604) 542-1036

INDEX NUMBER:

CAN-C-12
July, 1980

PROGRAM TYPE:

Voluntary
Non-financial
Community
National experiment

PROGRAM DESCRIPTION:

This national experimental project is designed to demonstrate the process, problems and impact of total community participation in energy conservation.

The objective is for each of the three communities (Vernon, B.C., Richmond Hill, Ontario, Fredericton, N.B.) to evolve its own energy conservation goals, strategies and action plans, through a citizen participation process involving all sections and levels of the community.

Commencing September 1979, the project operates in 5 stages over a 10 month period in each community: animation, awareness, collaboration, integration, consensus. This process is supported by continuous awareness programs from media coverage (newspaper energy columns, TV energy series) student projects, progress reports to the public, etc. Each community has an information resource centre for distribution of conservation literature, film viewing, student project research reference, meetings, etc.

Evaluations will take three forms: 1. a follow-up telephone interview to determine shifts in knowledge, attitude and behavior (measured against a September 1979 survey), 2. comparison of natural energy use in demonstration and comparison communities, 3. case studies, from personal interviews, to determine community satisfaction with the program.

COSTS-BENEFITS:

The project is sponsored by three of Canada's federal departments: Consumer and Corporate Affairs, Energy, Mines and Resources, and Supply and Services. Project budget is unknown, still too early for evaluation.

MAJOR RELATED LITERATURE REFERENCES:

1. D'Amore, Louis J., "Energy Conservation: A Total Community Approach Through Public Participation", Urban Forum, 4:6, pp. 12-20.

PROGRAM NAME:
Portland Energy Conservation Project

ORGANIZATION:
City of Portland, Oregon

CONTACT:
Cowles Mallory
Administrator
Office of Planning & Development
1220 SW 5th Avenue
Portland, Oregon 97204
Tel: (503) 248-4579

INDEX NUMBER:

US-C-21
July, 1980

PROGRAM TYPE:

Voluntary/Mandatory
Financial/Non-financial
Municipal Planning
Regional

PROGRAM DESCRIPTION:

Portland City assumed energy conservation leadership shortly after the 1973-4 oil embargo. The comprehensive program included the following actions: 1) the Portland Energy Conservation Project studied current & projected energy consumption and recommended actions to reduce future energy needs, under a contract with HUD. 2) A City Energy Management Task Force examined city operations & identified projects & procedures which would conserve energy 3) energy audits of 128 city buildings to identify energy wastage 4) City Council allocated funds for capital improvements to reduce energy consumption by City govt. 5) The Energy Policy Steering Committee was appointed by City Council & charged with recommending actions to stimulate conservation in the private sector.

Proposed residential & transport activities include demonstration houses, an information center, low interest loans, tax credits, retrofit house resale standards, state-mandated weatherization programs, car/van pooling, bicycle & pedestrian traffic improvements, $.01/gallon gas tax to finance traffic improvements.

COSTS-BENEFITS:

The weatherization program is expected to cost $300m and to show benefits of $450m over a 10-year period. Overall, by 1995, the program is expected to produce energy savings of 25-30$ p.a., or $135-$195 p.a. for the average resident, at 1980 prices.

The program is funded by HUD contracts and grants, a Portland City conservation budget, and private sector contributions. The City budget for the first year of implementation is $112,000.

MAJOR RELATED LITERATURE REFERENCES:

1. Details of the Portland methodology study (adopted by over 100 cities) are available in an eleven volume set from National Technical Information service, 5285 Port Royal Road, Springfield, VA 22151. One of these, Project Overview (PB276789/AS, $6) provides a retrospective look at the project, its costs, problems and pitfalls, and also a summary of each of the other ten volumes.

PROGRAM NAME:
Fitchburg Action to Conserve Energy (FACE)

ORGANIZATION:
City of Fitchburg

CONTACT:
Timothy M. Stewart
Planning Coordinator
Office of the Planning Coordinator
City of Fitchburg
Fitchburg, Massachusetts 01420
Tel: (617) 345-1018

INDEX NUMBER:

US-C-22
July, 1980

PROGRAM TYPE:

Voluntary
Financial/Non-financial
Community
Regional

PROGRAM DESCRIPTION:

Inspired by rapidly rising fuel costs and the City's high average household oil consumption (1200 gallons p.a.) Fitchburg developed a low-cost, total community winterization program, with the aim of reducing home heating bills by 25%.

Under FACE the City staffed 9 neighborhood training centers to teach the basics of winterization at different locations around the town. Recommendations centered on low-cost, high-yield activities such as caulking, weatherstripping, hot water heat insulation, cleaning cracks in ducts and lowering water heater thermostats. Families unable to perform these tasks themselves were able to get help from trained volunteer work crews organized by each center. DOE and HUD financing enabled average material costs to be kept to less than $25 per home, and free for lower income people willing to undergo the self-help training program.

A FACE advisory council, comprised of all city sectors, spearheaded an aggressive radio, television, mail and door-to-door campaign promoting the program.

The program ran for 8 weeks from October to December 1979 and resulted in over 3500 of Fitchburg's 10,000 householders attending the training sessions, with 1800 receiving weatherization kits and 350 requesting work crew assistance.

COSTS-BENEFITS:

Fitchburg received $210,000 in grants, materials subsidies, and evaluation assistance from HUD, DOE, Massachusetts Office of Energy Resources and Massachusetts State. Savings of 2.1 million gallons of oil each winter heating season have been projected.

MAJOR RELATED LITERATURE REFERENCES:

1. The Fitchburg Action to Conserve Energy Handbook, available from above coontact.

2. Carrington, A. David, "A Report on the Potential of Consumer Animation for Energy Conservation", Saint John, New Brunswick, Community Planning Association of Canada, 1977.

PROGRAM NAME:
Public Information Program

ORGANIZATION:
BC Hydro

CONTACT:
Dr. Tim Newton
Energy Conservation Division
BC Hydro
970 Burrard Street
Vancouver, B.C. V6Z 1Y3
Tel: (604) 663-3583

INDEX NUMBER:

CAN-C-31
July, 1980

PROGRAM TYPE:

Voluntary
Non-financial
Information
Regional

PROGRAM DESCRIPTION:

BC Hydro undertakes, in conjunction with federal and provincial energy agencies, an energy conservation program. The Advertising and Public Relations program uses radio and TV commercials, newspaper advertising, outdoor posters, transit car cards, and billboards.

The utility also participates in radio and TV conservation interviews, public education addresses to business, school and other interest groups. Slide presentations and other educational materials have been developed and made available to teachers through Hydro's district offices. A standard one-day workshop presentation is also made available.

BC Hydro organizes shopping centre displays to promote insulation and other measures, in conjunction with its thermography program. The utility is now the largest distributor of federal energy conservation literature (outside the federal government) in British Columbia.

COSTS-BENEFITS:

Unknown

MAJOR RELATED LITERATURE REFERENCES:

1. Craig, C. Samuel and John M. McCann, "The Impact of Persuasive Communications on Energy Conservation", Energy Systems and Policy, Vol. 2, #4, April 1978, pp. 433-447.

2. Barnaby, David J. and Richard C. Rizenstein, "Energy/Pollution AID Segments and Information Source Utilization", Paper presented at Southern Marketing Association Annual Conference, New Orleans, November, 1978.